

IN THE CLAIMS

Amend Claims 1, 3, 4, 9, 10, 13, 15, 17, 24, 26, 31, 33, 37, 39, 41, and 43 and add new Claims 47 - 60 so that the claims are as follows.

1. (Currently amended) A structure comprising:

an electron-emitting device which comprises a backplate and an array of laterally separated electron-emissive regions situated over the backplate, each electron-emissive region comprising at least one electron-emissive element;

a light-emitting device coupled to the electron-emitting device to form a hermetically sealed enclosure through which electrons emitted by the electron-emissive regions ~~electron-emitting device~~ pass to strike the light-emitting device and cause it to emit light that produces an image; and

inert gas located in open space of the sealed enclosure, the inert gas consisting of at least one of (a) helium at a partial pressure of at least 2×10^{-5} torr, (b) argon at a partial pressure of at least 3×10^{-5} torr, and (c) at least one of neon, krypton, xenon, and radon at a partial pressure of at least 5×10^{-7} torr.

2. (Original) A structure as in Claim 1 wherein the structure is a flat-panel display.

3. (Currently amended) A structure as in Claim 1 wherein the light-emitting device comprises:

a faceplate; and

an array of laterally separated light-emissive regions situated over the faceplate, each light-emissive region situated opposite a corresponding different one of the electron-emissive regions. ~~electron-emitting device comprises: a backplate; and an array of laterally separated electron-emissive regions situated over the backplate, each electron-emissive region comprising at least one electron-emissive element.~~

4. (Currently amended) A structure as in Claim 1 ~~Claim 3~~ wherein the electron-emissive regions emit electrons according to field emission.

5. (Original) A structure as in Claim 1 wherein the inert gas comprises at least one of (a) neon at a partial pressure of at least 1×10^{-5} torr and (b) krypton at a partial pressure of at least 1×10^{-6} torr.

6. (Original) A structure as in Claim 1 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 5×10^{-5} torr, (b) neon at a partial pressure of at least 2×10^{-5} torr, (c) argon at a partial pressure of at least 4×10^{-5} torr, (d) krypton at a partial pressure of at least 2×10^{-6} torr, and (e) at least one of xenon and radon at a partial pressure of at least 1×10^{-6} torr.

7. (Original) A structure as in Claim 1 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 1×10^{-4} torr, (b) at least one of neon and argon at a partial pressure of at least 5×10^{-5} torr, (c) krypton at a partial pressure of at least 5×10^{-6} torr, and (d) at least one of xenon and radon at a partial pressure of at least 2×10^{-6} torr.

8. (Original) A structure as in Claim 1 further including a getter for collecting non-inert contaminant material present in the sealed enclosure.

9. (Currently amended) A structure as in Claim 8 wherein the electron-emitting device has an active electron-emitting portion across which electrons are emitted from the electron-emissive regions, ~~electron-emitting device~~, the getter being distributed across the active electron-emitting portion.

10. (Currently amended) A structure as in Claim 1 further including a reservoir for supplying further inert gas to the open space of the sealed enclosure.

11. (Original) A structure as in Claim 1 wherein the inert gas is at a partial pressure of no more than 1×10^{-1} torr.

12. (Original) A structure as in Claim 1 wherein the inert gas comprises at least one of (a) helium at a partial pressure of no more than 1×10^{-1} torr, (b) neon at a partial pressure of no more than 5×10^{-2} torr, (c) argon at a partial pressure of no more than

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1×10^{-2} torr, (d) krypton at a partial pressure of no more than 5×10^{-3} torr, and (e) xenon or radon at a partial pressure of no more than 1×10^{-3} torr.

13. (Currently amended) A structure comprising:

an electron-emitting device which comprises a backplate and an array of laterally separated electron-emissive regions situated over the backplate, each electron-emissive region comprising at least one electron-emissive element;

a light-emitting device coupled to the electron-emitting device to form a hermetically sealed enclosure through which electrons emitted by the electron-emissive regions ~~electron-emitting device~~ pass to strike the light-emitting device and cause it to emit light that produces an image;

inert gas located in open space of the sealed enclosure at a partial pressure of at least 5×10^{-7} torr; and

a reservoir for supplying further inert gas to the open space of the sealed enclosure.

14. (Original) A structure as in Claim 13 wherein the structure is a flat-panel display.

15. (Currently amended) A structure as in Claim 13 wherein the light-emitting device comprises:

a faceplate; and

an array of laterally separated light-emissive regions situated over the faceplate, each light-emissive region situated opposite a corresponding different one of the electron-emissive regions. ~~electron-emitting device comprises: a backplate; and an array of laterally separated electron-emissive regions situated over the backplate, each electron-emissive region comprising at least one electron-emissive element.~~

16. (Original) A structure as in Claim 13 wherein the electron-emissive regions emit electrons according to field emission.

17. (Currently amended) A structure as in Claim 13 wherein the reservoir comprises a container that encloses inert gas, the container having a wall through which inert gas passes from the container to the open space of the sealed enclosure.

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18. (Original) A structure as in Claim 17 wherein the wall is gas permeable.
19. (Original) A structure as in Claim 17 wherein at least part of the inert gas in the container is in gaseous form.
20. (Original) A structure as in Claim 17 wherein at least part of the inert gas in the container is in inert-gas compound form.
21. (Original) A structure as in Claim 17 wherein at least part of the inert gas in the container is present in inert-gas absorbent-material form.
22. (Original) A structure as in Claim 13 wherein the reservoir comprises at least one piece of inert-gas compound material.
23. (Original) A structure as in Claim 13 wherein the reservoir comprises at least one piece of absorbent material charged with inert gas.
24. (Currently amended) A structure as in Claim 13 wherein the reservoir comprises of at least one piece of material impregnated with inert gas.
25. (Original) A structure as in Claim 13 further including a getter for collecting non-inert contaminant material present in the sealed enclosure.
26. (Currently amended) A structure as in Claim 25 wherein the electron-emitting device has an active electron-emitting portion across which electrons are emitted from the electron-emissive regions, ~~electron-emitting device~~, the getter being distributed across the active electron-emitting portion.
27. (Original) A structure as in Claim 13 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 2×10^{-5} torr, (b) at least one of neon and argon at a partial pressure of at least 1×10^{-5} torr, (c) krypton at a partial pressure of at least 1×10^{-6} torr, and (d) at least one of xenon and radon at a partial pressure of at least 5×10^{-7} torr.

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28. (Original) A structure as in Claim 13 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 5×10^{-5} torr, (b) at least one of neon and argon at a partial pressure of at least 2×10^{-5} torr, (c) krypton at a partial pressure of at least 2×10^{-6} torr, and (d) at least one of xenon and radon at a partial pressure of at least 1×10^{-6} torr.

29. (Original) A structure as in Claim 13 wherein the inert gas is at a partial pressure of no more than 1×10^{-1} torr.

30. (Original) A structure as in Claim 13 wherein the inert gas comprises at least one of (a) helium at a partial pressure of no more than 1×10^{-1} torr, (b) neon at a partial pressure of no more than 5×10^{-2} torr, (c) argon at a partial pressure of no more than 1×10^{-2} torr, (d) krypton at a partial pressure of no more than 5×10^{-3} torr, and (e) xenon or radon at a partial pressure of no more than 1×10^{-3} torr.

31. (Currently amended) A method of cleaning a structure comprising an electron-emitting device and a light-emitting device coupled to the electron-emitting device to form a hermetically sealed enclosure through which electrons emitted by an array of laterally separated electron-emissive regions of the electron-emitting device pass to strike the light-emitting device and cause it to emit light that produces an image, open space of the sealed enclosure containing inert gas consisting of at least one of (a) helium at a partial pressure of at least 2×10^{-5} torr, (b) argon at a partial pressure of at least 3×10^{-5} torr, and (c) at least one of neon, krypton, xenon, and radon at a partial pressure of at least 5×10^{-7} torr, the method comprising operating the electron-emitting device so that part of the electrons emitted by the electron-emissive regions ~~electron-emitting device~~ collide with atoms of the inert gas to produce inert-gas ions which bombard contaminant material situated over the electron-emitting device in the sealed enclosure and cause at least part of the contaminant material to be dislodged from the electron-emitting device.

32. (Original) A method as in Claim 31 wherein the structure is a flat-panel display.

33. (Currently amended) A method as in Claim 31 wherein the ~~electron-emitting device comprises a backplate and an array of laterally separated~~ electron-emissive regions are

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situated over ~~a the~~ backplate of the electron-emitting device, each electron-emissive region comprising at least one electron-emissive element, the contaminant material attacked by the inert-gas ions comprising contaminant material situated over the electron-emissive elements.

34. (Original) A method as in Claim 31 wherein the inert gas comprises at least one of (a) neon at a partial pressure of at least 1×10^{-5} torr and (b) krypton at a partial pressure of at least 1×10^{-6} torr.

35. (Original) A method as in Claim 31 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 5×10^{-5} torr, (b) neon at a partial pressure of at least 2×10^{-5} torr, (c) argon at a partial pressure of at least 4×10^{-5} torr, (d) krypton at a partial pressure of at least 2×10^{-6} torr, and (e) at least one of xenon and radon at a partial pressure of at least 1×10^{-6} torr.

36. (Original) A method as in Claim 31 further including collecting non-inert material, including particles of the dislodged contaminant material, present in the sealed enclosure.

37. (Currently amended) A method as in Claim 31 further including supplying the open space of the sealed enclosure with further inert gas.

38. (Original) A method as in Claim 37 further including collecting non-inert material, including particles of the dislodged contaminant material, present in the sealed enclosure.

39. (Currently amended) A method of cleaning a structure comprising an electron-emitting device and a light-emitting device coupled to the electron-emitting device to form a hermetically sealed enclosure through which electrons emitted by an array of laterally separated electron-emissive regions of the electron-emitting device pass to strike the light-emitting device and cause it to emit light that produces an image, open space of the sealed enclosure containing inert gas at a partial pressure of at least 5×10^{-7} torr, the method comprising: comprising;

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operating the electron-emitting device so that part of the electrons emitted by the electron-emissive regions ~~electron-emitting device~~ collide with atoms of the inert gas to produce inert-gas ions which bombard contaminant material situated over the electron-emitting device in the sealed enclosure and cause at least part of the contaminant material to be dislodged from the electron-emitting device; and

supplying the open space of the sealed enclosure with further inert gas.

40. (Original) A method as in Claim 39 wherein the structure is a flat-panel display.

41. (Currently amended) A method as in Claim 39 wherein the ~~electron-emitting device comprises a backplate and an array of laterally separated~~ electron-emissive regions ~~are~~ situated over ~~a the backplate of the electron-emitting device~~, each electron-emissive region comprising at least one electron-emissive element, the contaminant material bombarded by the inert-gas ions comprising contaminant material situated over the electron-emissive elements.

42. (Original) A method as in Claim 39 further including collecting non-inert material, including particles of the dislodged contaminant material, present in the sealed enclosure.

43. (Currently amended) A method as in Claim 39 wherein the further inert gas supplied to the open space of the sealed enclosure compensates at least partially for inert-gas ions that lodge in the electron-emitting device.

44. (Original) A method as in Claim 43 further including collecting non-inert material, including particles of the dislodged contaminant material, present in the sealed enclosure.

45. (Original) A method as in Claim 39 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 2×10^{-5} torr, (b) at least one of neon and argon at a partial pressure of at least 1×10^{-5} torr, (c) krypton at a partial pressure of at least 1×10^{-6} torr, and (d) at least one of xenon and radon at a partial pressure of at least 5×10^{-7} torr.

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46. (Original) A method as in Claim 39 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 5×10^{-5} torr, (b) at least one of neon and argon at a partial pressure of at least 2×10^{-5} torr, (c) krypton at a partial pressure of at least 2×10^{-6} torr, and (d) at least one of xenon and radon at a partial pressure of at least 1×10^{-6} torr.

47. (New) A method as in Claim 31 wherein the light-emitting device comprises:
a faceplate; and
an array of laterally separated light-emissive regions situated over the faceplate, each light-emissive region situated opposite a corresponding different one of the electron-emissive regions.

48. (New) A method as in Claim 39 wherein the light-emitting device comprises:
a faceplate; and
an array of laterally separated light-emissive regions situated over the faceplate, each light-emissive region situated opposite a corresponding different one of the electron-emissive regions.

49. (New) A structure comprising:
an electron-emitting device;
a light-emitting device coupled to the electron-emitting device to form a hermetically sealed enclosure through which electrons emitted by the electron-emitting device pass to strike the light-emitting device and cause it to emit light that produces an image;
inert gas located in open space of the sealed enclosure at a partial pressure of at least 5×10^{-7} torr; and
a container that encloses inert gas, the container having a wall through which inert gas passes from the container to the open space of the sealed enclosure.

50. (New) A structure as in Claim 49 wherein the structure is a flat-panel display.

51. (New) A structure as in Claim 49 wherein the wall is gas permeable.

52. (New) A structure as in Claim 49 wherein at least part of the inert gas in the container is in gaseous form.

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53. (New) A structure as in Claim 49 wherein at least part of the inert gas in the container is in inert-gas compound form.

54. (New) A structure as in Claim 49 wherein at least part of the inert gas in the container is present in inert-gas absorbent-material form.

55. (New) A structure as in Claim 49 further including a getter for collecting non-inert contaminant material present in the sealed enclosure.

56. (New) A structure as in Claim 55 wherein the electron-emitting device has an active electron-emitting portion across which electrons are emitted from the electron-emitting device, the getter being distributed across the active electron-emitting portion.

57. (New) A structure as in Claim 49 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 2×10^{-5} torr, (b) at least one of neon and argon at a partial pressure of at least 1×10^{-5} torr, (c) krypton at a partial pressure of at least 1×10^{-6} torr, and (d) at least one of xenon and radon at a partial pressure of at least 5×10^{-7} torr.

58. (New) A structure as in Claim 49 wherein the inert gas comprises at least one of (a) helium at a partial pressure of at least 5×10^{-5} torr, (b) at least one of neon and argon at a partial pressure of at least 2×10^{-5} torr, (c) krypton at a partial pressure of at least 2×10^{-6} torr, and (d) at least one of xenon and radon at a partial pressure of at least 1×10^{-6} torr.

59. (New) A structure as in Claim 49 wherein the inert gas is at a partial pressure of no more than 1×10^{-1} torr.

60. (New) A structure as in Claim 49 wherein the inert gas comprises at least one of (a) helium at a partial pressure of no more than 1×10^{-1} torr, (b) neon at a partial pressure of no more than 5×10^{-2} torr, (c) argon at a partial pressure of no more than 1×10^{-2} torr, (d) krypton at a partial pressure of no more than 5×10^{-3} torr, and (e) xenon or radon at a partial pressure of no more than 1×10^{-3} torr.

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